MODELS

LSC & LSC From 500,001

LSC-1 (Holiday)

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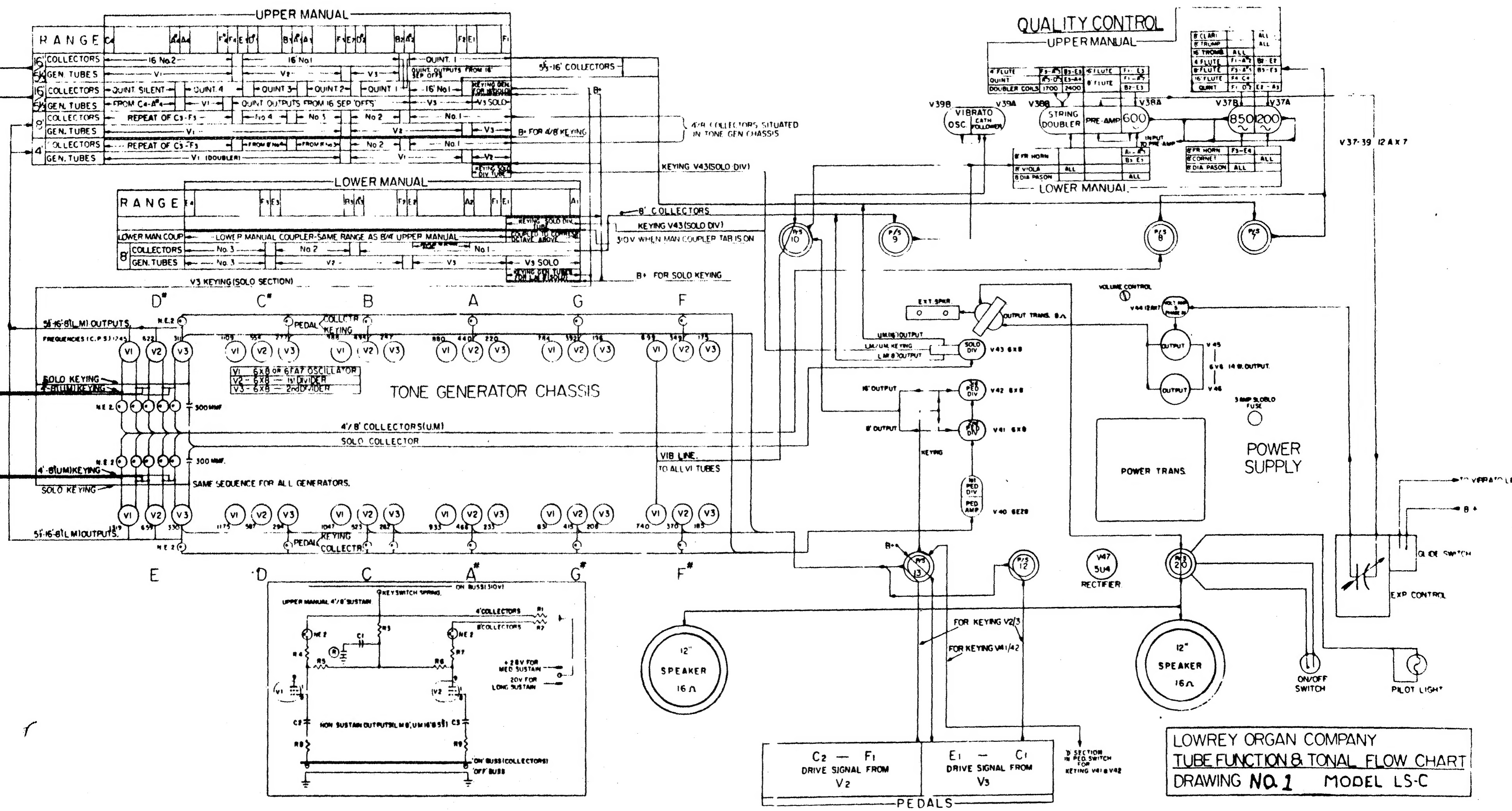
LOWREY ELECTRONICS SERVICE DEPT.

4400 W. 45th St.

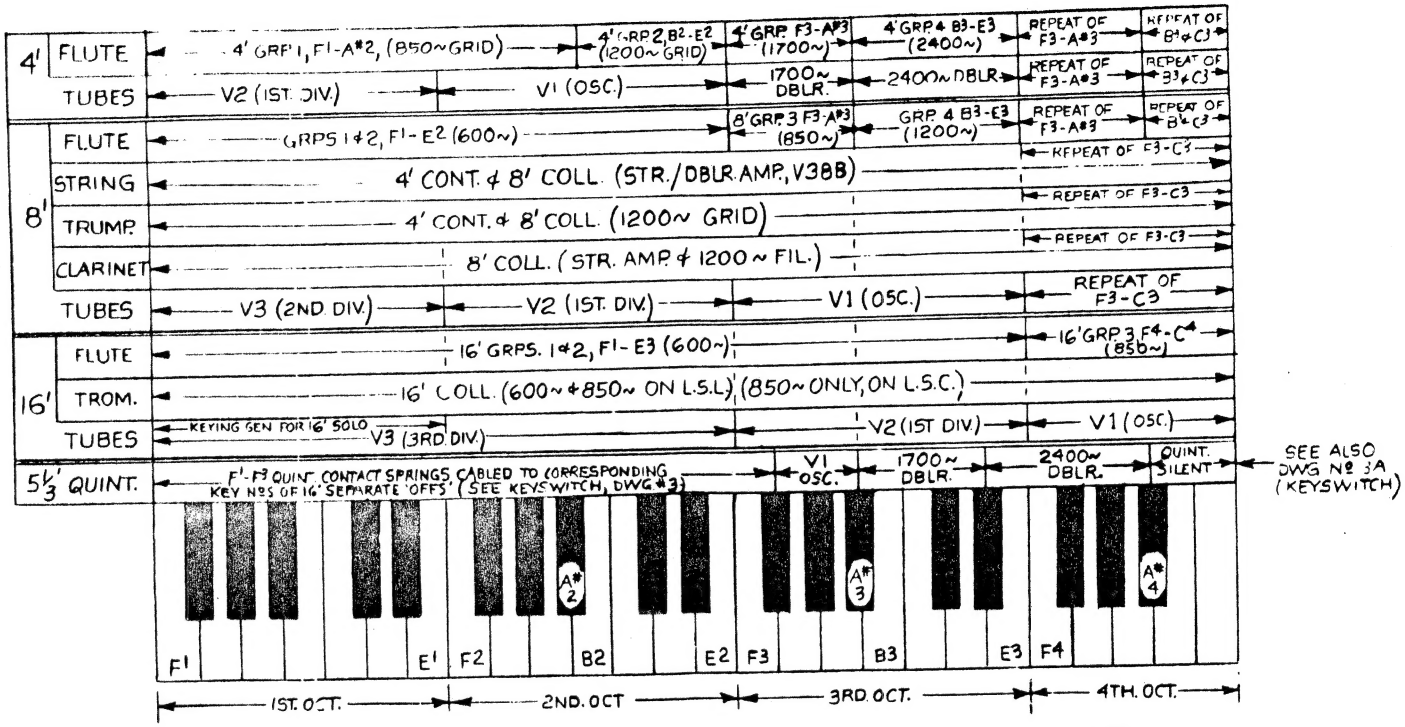
Chicago, Illinois 60632

993-016372



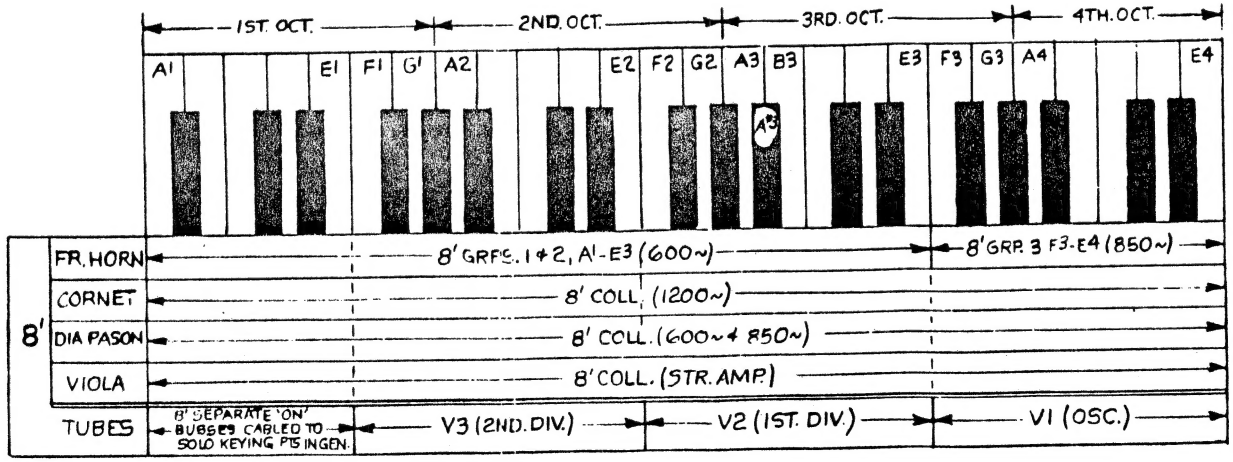
UPPER MANUAL
LOWER MANUAL
QUALITY CONTROL
TONE GENERATOR CHASSIS
POWER SUPPLY
POWER TRANS.
PEDALS
C2 — F1 DRIVE SIGNAL FROM V2
E1 — C1 DRIVE SIGNAL FROM V3
12" SPEAKER 16 Ω
RECTIFIER
EXP CONTROL
ON/OFF SWITCH
PILOT LIGHT
LOWREY ORGAN COMPANY
TUBE FUNCTION & TONAL FLOW CHART
DRAWING NO. 1 MODEL LS-C

UPPER MANUAL



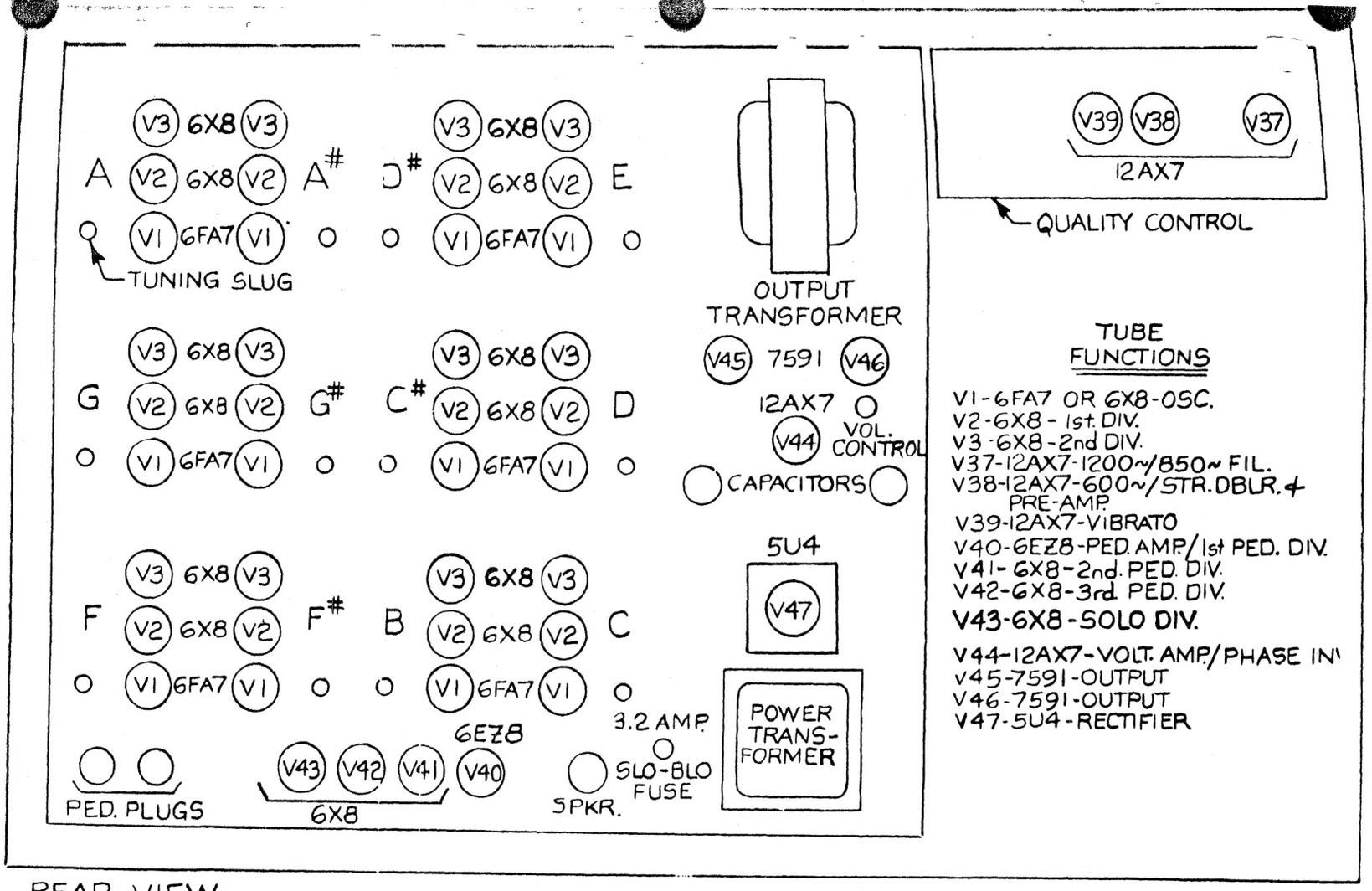
B

LOWER MANUAL



LOWREY ORGAN CO.
TONAL FLOW & TUBE LOCATION CHART
MODEL L.S.C. 1
DWG. Nº 1A

NOTE:
DEFINITIONS OF GRPS. & COLLECTORS ARE,
(A) GROUP - WIRE FOR COLLECTING A GROUP OF NOTES.
(B) COLLECTOR - ALL GRPS. TIED TOGETHER.
(C) 4' CONTINUENT COLLECTOR - A 4' FREQUENCY APPLIED TO AN 8' COLL.

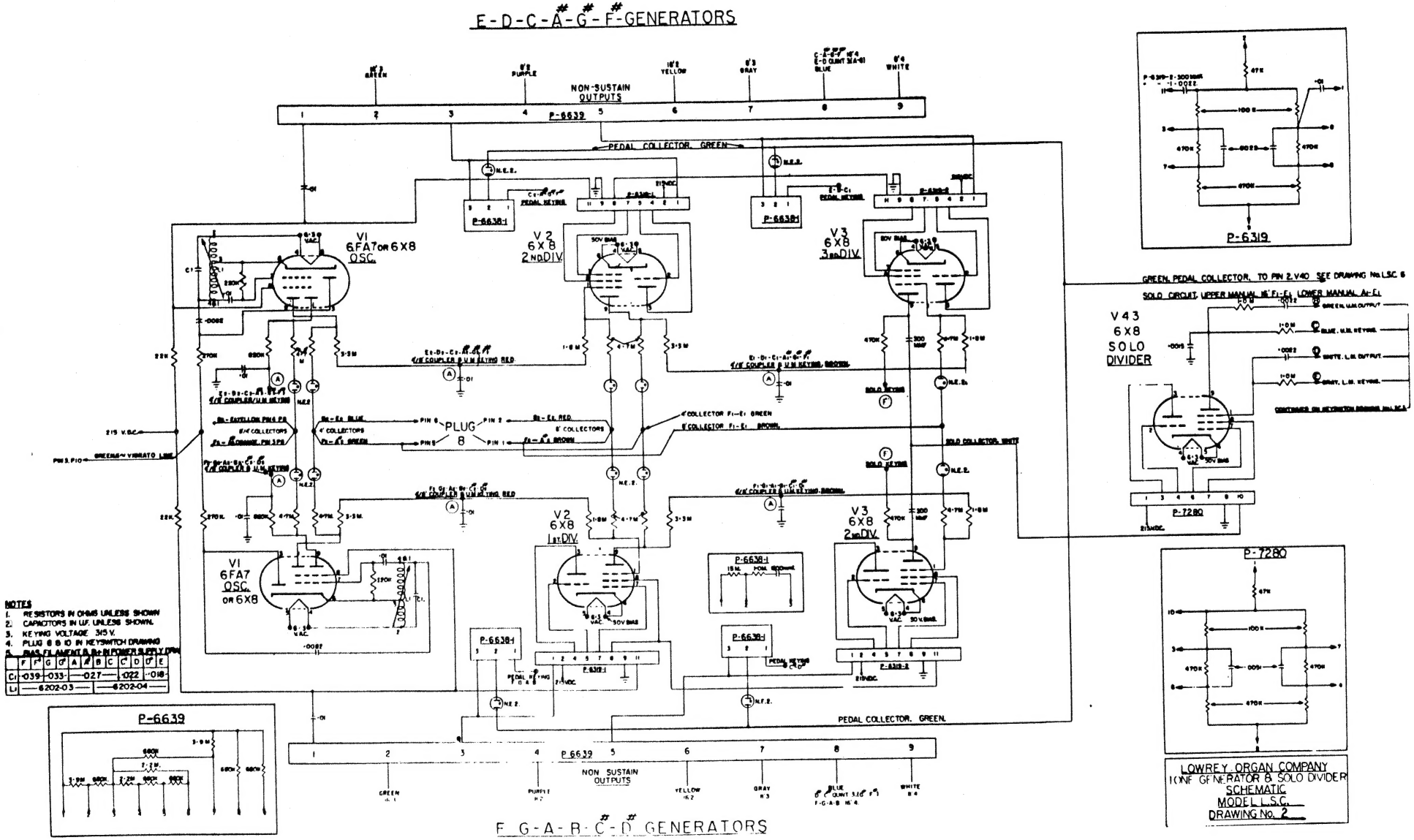


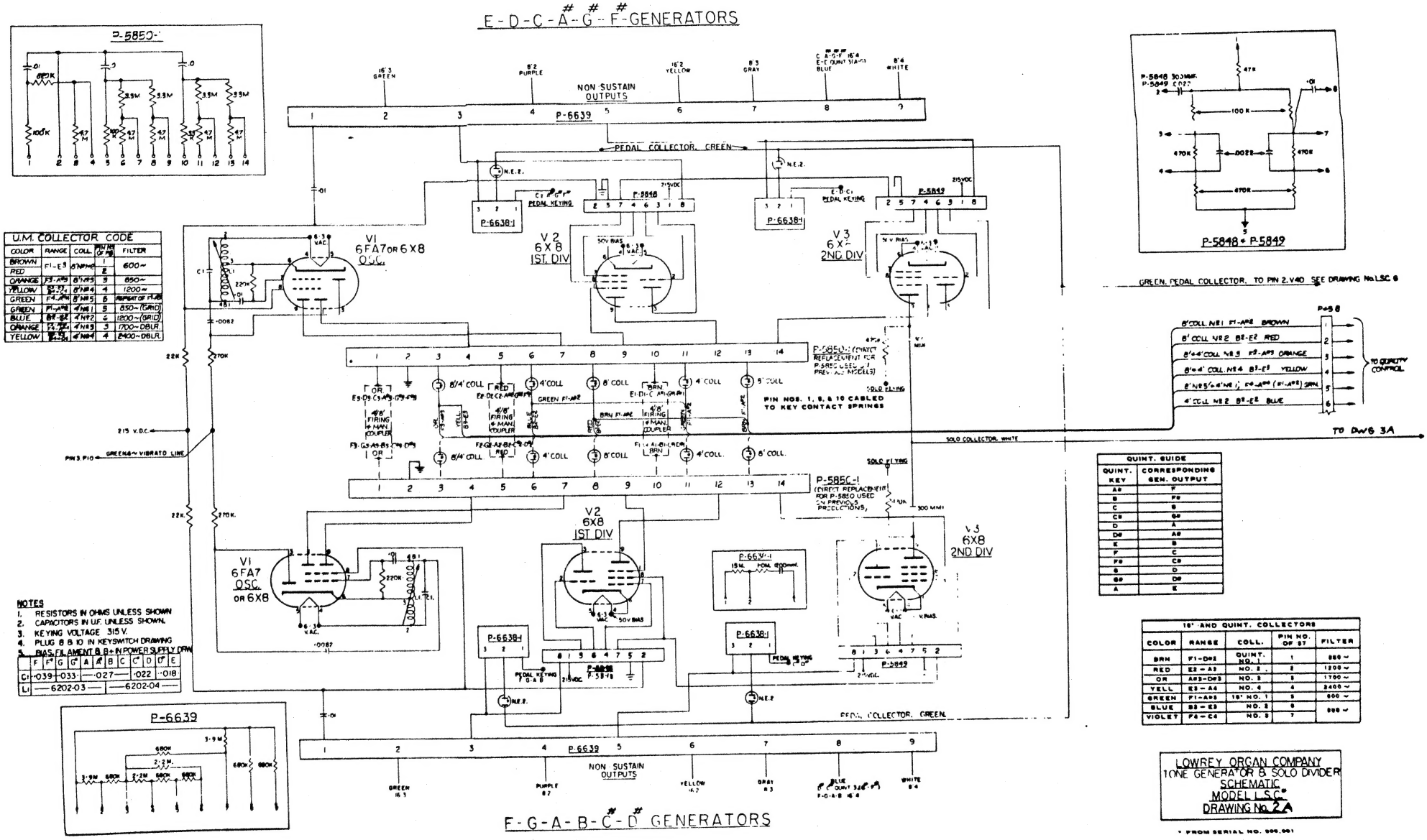
REAR VIEW

TUBE FUNCTIONS

V1-6FA7 OR 6X8-OSC.
V2-6X8-1st. DIV.
V3-6X8-2nd DIV.
V37-12AX7-1200~/850~ FIL.
V38-12AX7-600~/STR. DBLR. & PRE-AMP.
V39-12AX7-VIBRATO
V40-6EZ8-PED. AMP/1st PED. DIV.
V41-6X8-2nd. PED. DIV.
V42-6X8-3rd. PED. DIV.
V43-6X8-SOLO DIV.
V44-12AX7-VOLT. AMP./PHASE IN\
V45-7591-OUTPUT
V46-7591-OUTPUT
V47-5U4-RECTIFIER

LOWREY ORGAN CO.
TONAL FLOW & TUBE LOCATION CHART
MODEL L.S.C.-1
DWG. Nº 1 B


E-D-C-A#-G#-F#-GENERATORS
NON-SUSTAIN OUTPUTS
P-6639
PEDAL COLLECTOR, GREEN
V1 6FA7 OR 6X8 OSC.
V2 6X8 2ND DIV.
V3 6X8 3RD DIV.
V2 6X8 1ST DIV.
V3 6X8 2ND DIV.
V1 6FA7 OSC. OR 6X8
PLUG 8
P-6638-1
P-6319
P-7280
V43 6X8 SOLO DIVIDER
SOLO COLLECTOR, WHITE
NOTES
1. RESISTORS IN OHMS UNLESS SHOWN
2. CAPACITORS IN UF. UNLESS SHOWN.
3. KEYING VOLTAGE 345 V.
4. PLUG 8 IS 10 IN KEYSWITCH DRAWING
F F# G G# A A# B C C# D D# E
C1 .039 .033 .027 .022 .018
L1 6202-03 6202-04
F-G-A-B C-D GENERATORS
LOWREY ORGAN COMPANY
CONF GENERATOR & SOLO DIVIDER
SCHEMATIC
MODEL L.S.C.
DRAWING No. 2



U.M. COLLECTOR CODE				
COLOR	RANGE	COLL.	PIN NO. OF 37	FILTER
BROWN	F1-E3	8'NO1	1	600~
RED			2	
ORANGE	F3-A#3	8'NO3	3	850~
YELLOW	G3-A#3	8'NO4	4	1200~
GREEN	F4-A#4	8'NO5	5	REPEAT OF 1 ABOVE
GREEN	F1-A#3	4'NO1	5	850~ (GRID)
BLUE	B3-E4	4'NO2	6	1200~ (GRID)
ORANGE	F3-A#3	4'NO3	3	1700~ (DBLR)
YELLOW	G3-A#3	4'NO4	4	2400~ (DBLR)

NOTES
1. RESISTORS IN OHMS UNLESS SHOWN
2. CAPACITORS IN U.F. UNLESS SHOWN.
3. KEYING VOLTAGE 315 V.
4. PLUG 8 & 10 IN KEYSWITCH DRAWING
5. BIAS, FILAMENT & B+ IN POWER SUPPLY DRAWING

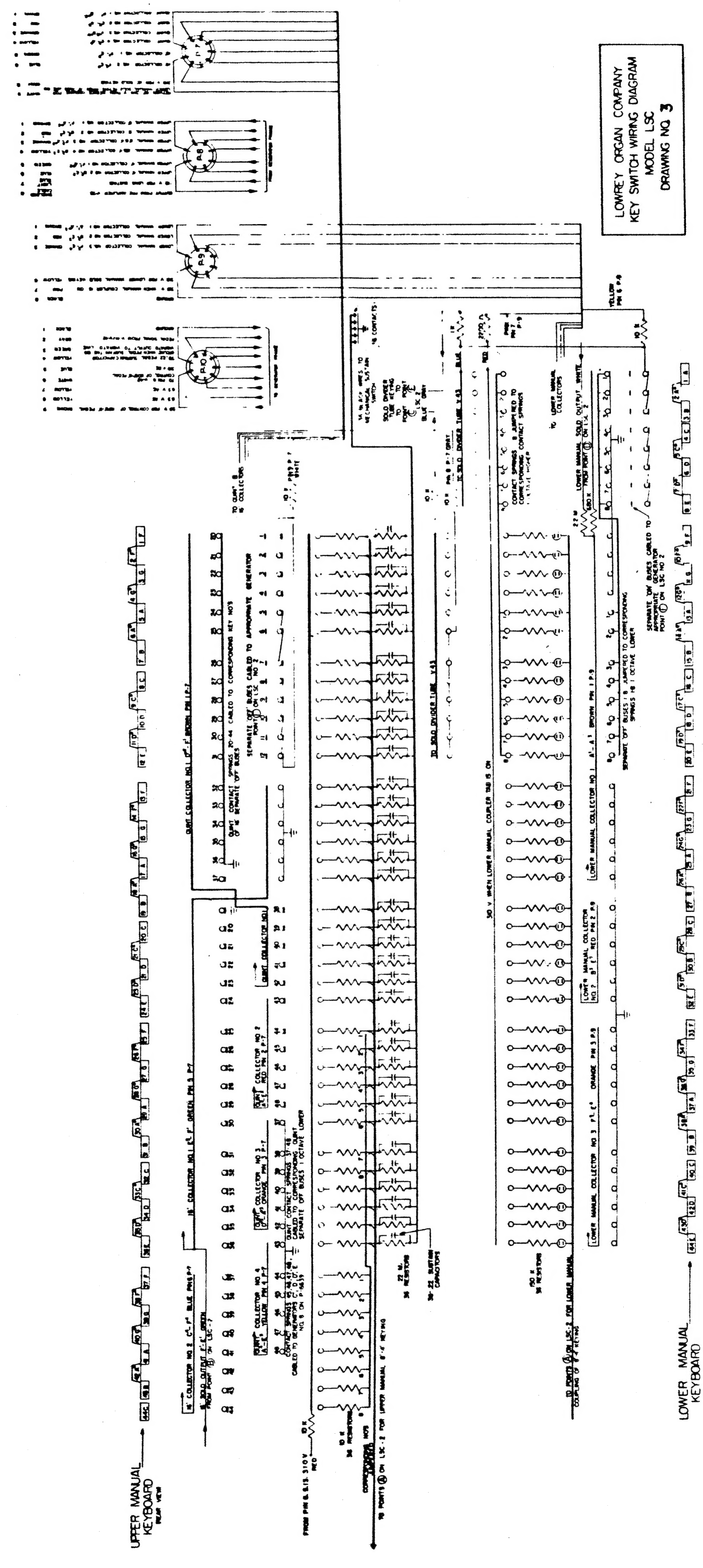
	F	F#	G	G#	A	A#	B	C	C#	D	D#	E
C1	.039		.033		.027			.022		.018		
L1	6202-03							6202-04				

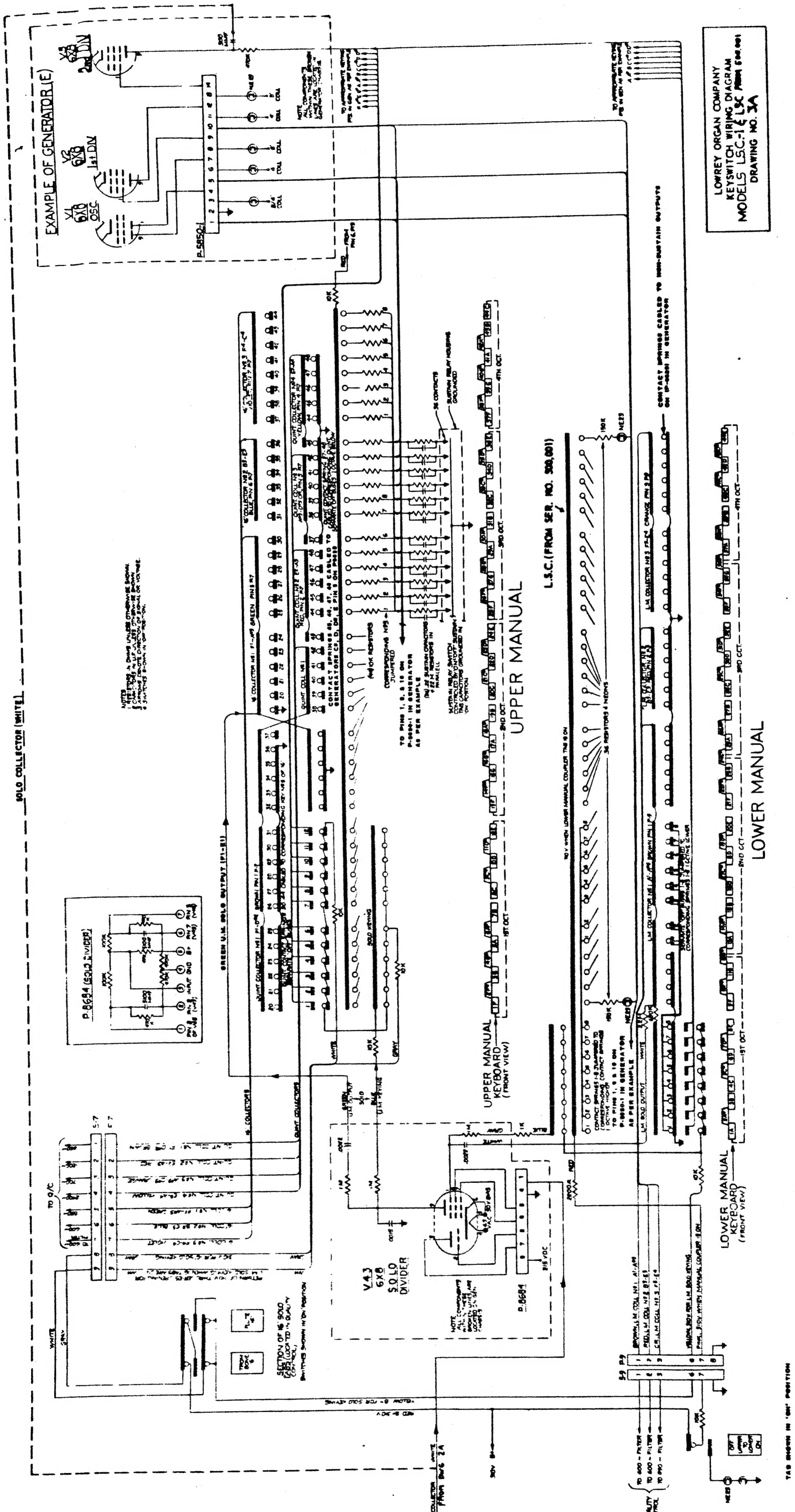
QUINT. GUIDE	
QUINT. KEY	CORRESPONDING GEN. OUTPUT
A#	F
B	F#
C	G
C#	G#
D	A
D#	A#
E	B
F	C
F#	C#
G	D
G#	D#
A	E

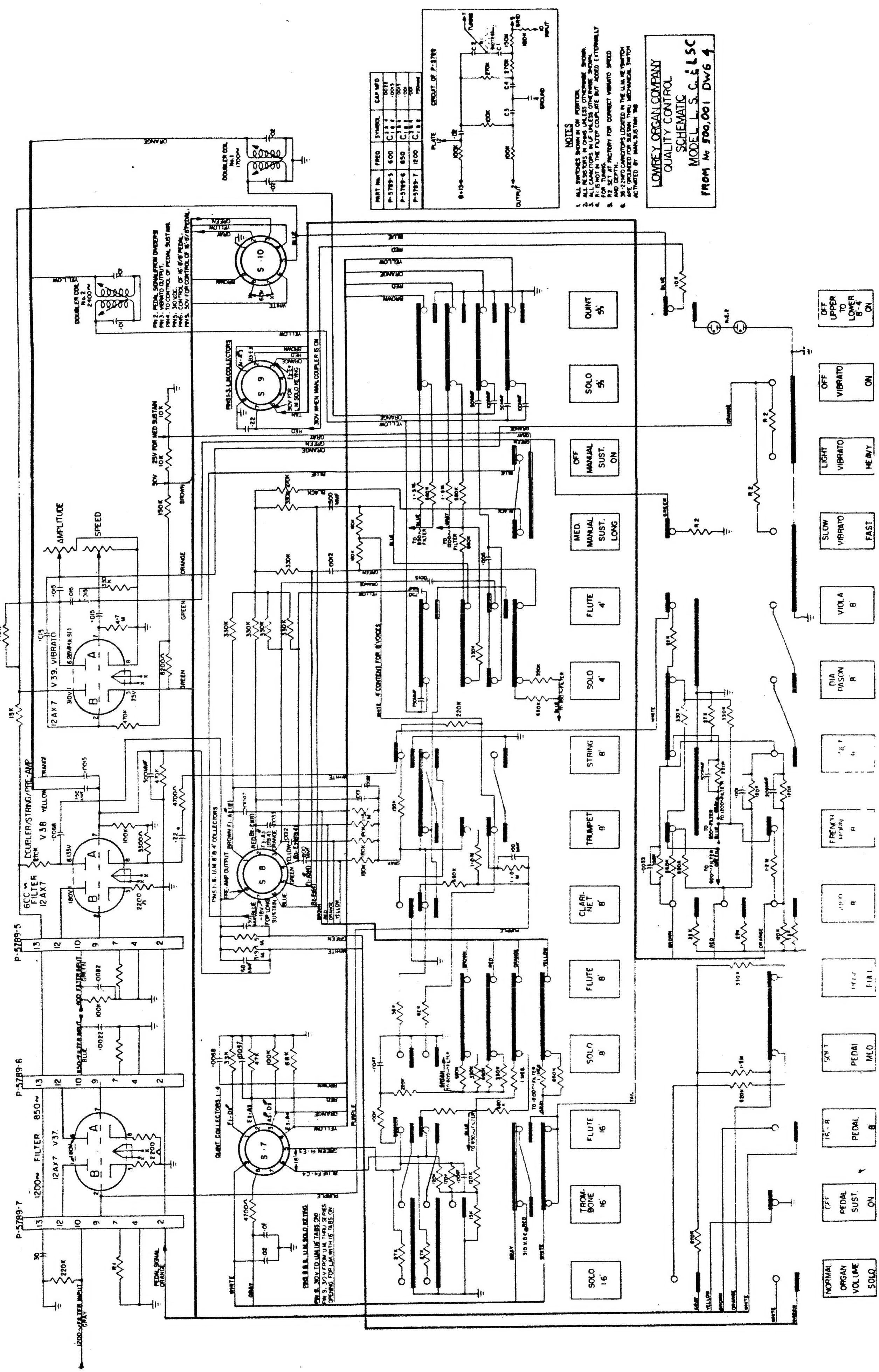
16' AND QUINT. COLLECTORS				
COLOR	RANGE	COLL.	PIN NO. OF 37	FILTER
BRN	F1-D#2	QUINT. NO. 1	1	850 ~
RED	E2 - A3	NO. 2	2	1200 ~
OR	A#3-D#3	NO. 3	3	1700 ~
YELL	E3 - A4	NO. 4	4	2400 ~
GREEN	F1-A#3	16' NO. 1	5	600 ~
BLUE	B3 - E3	NO. 2	6	850 ~
VIOLET	F4 - C4	NO. 3	7	

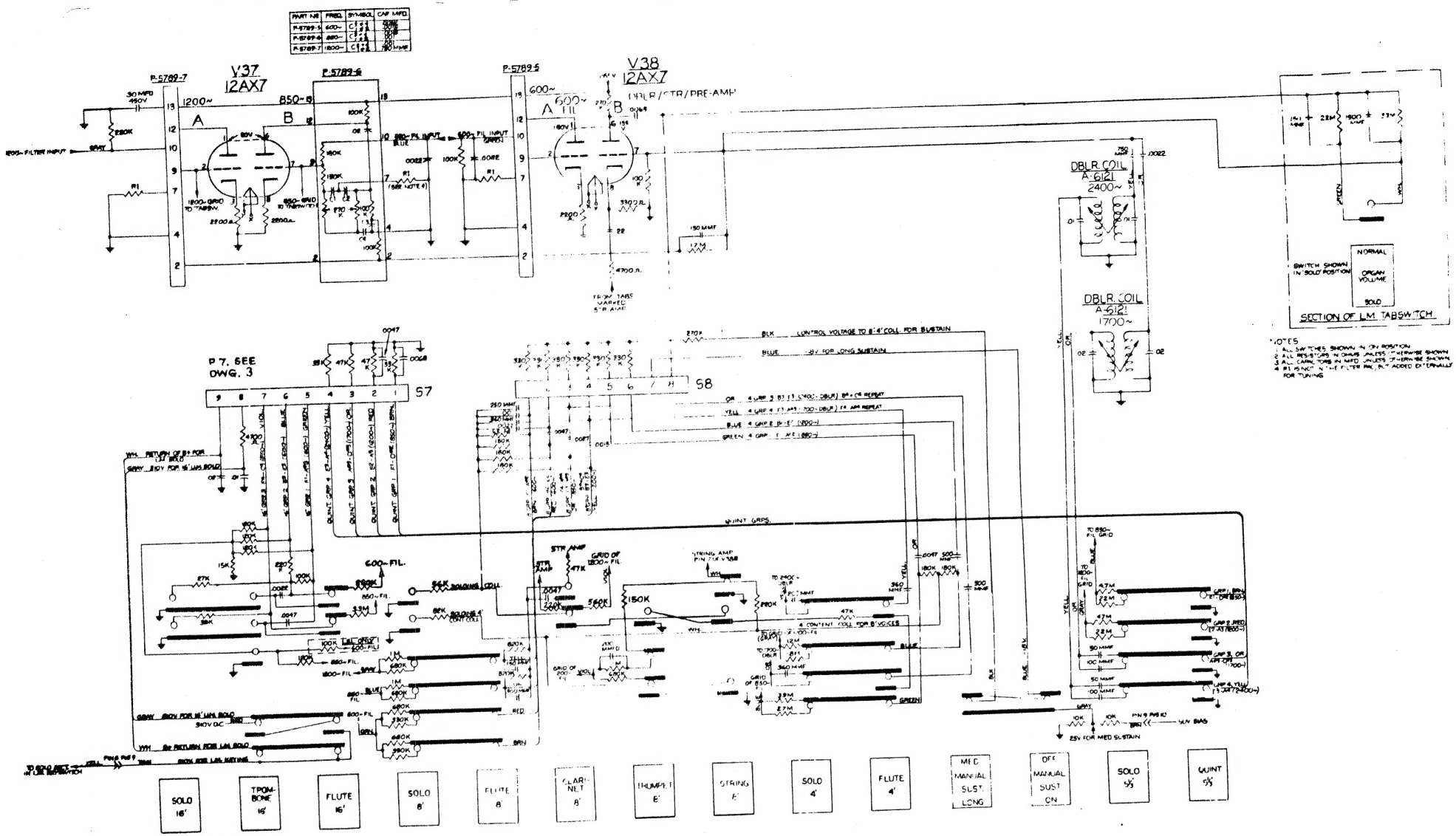
LOWREY ORGAN COMPANY
TONE GENERATOR & SOLO DIVIDER
SCHEMATIC
MODEL LSC*
DRAWING No. 2A

* FROM SERIAL NO. 600,001


LOWREY ORGAN COMPANY
KEY SWITCH WIRING DIAGRAM
MODEL LSC
DRAWING NO 3
UPPER MANUAL
KEYBOARD
REAR VIEW
LOWER MANUAL
KEYBOARD
REAR VIEW
LOWER MANUAL COLLECTOR NO 1
LOWER MANUAL COLLECTOR NO 3
LOWER MANUAL SOLO OUTPUT WHITE

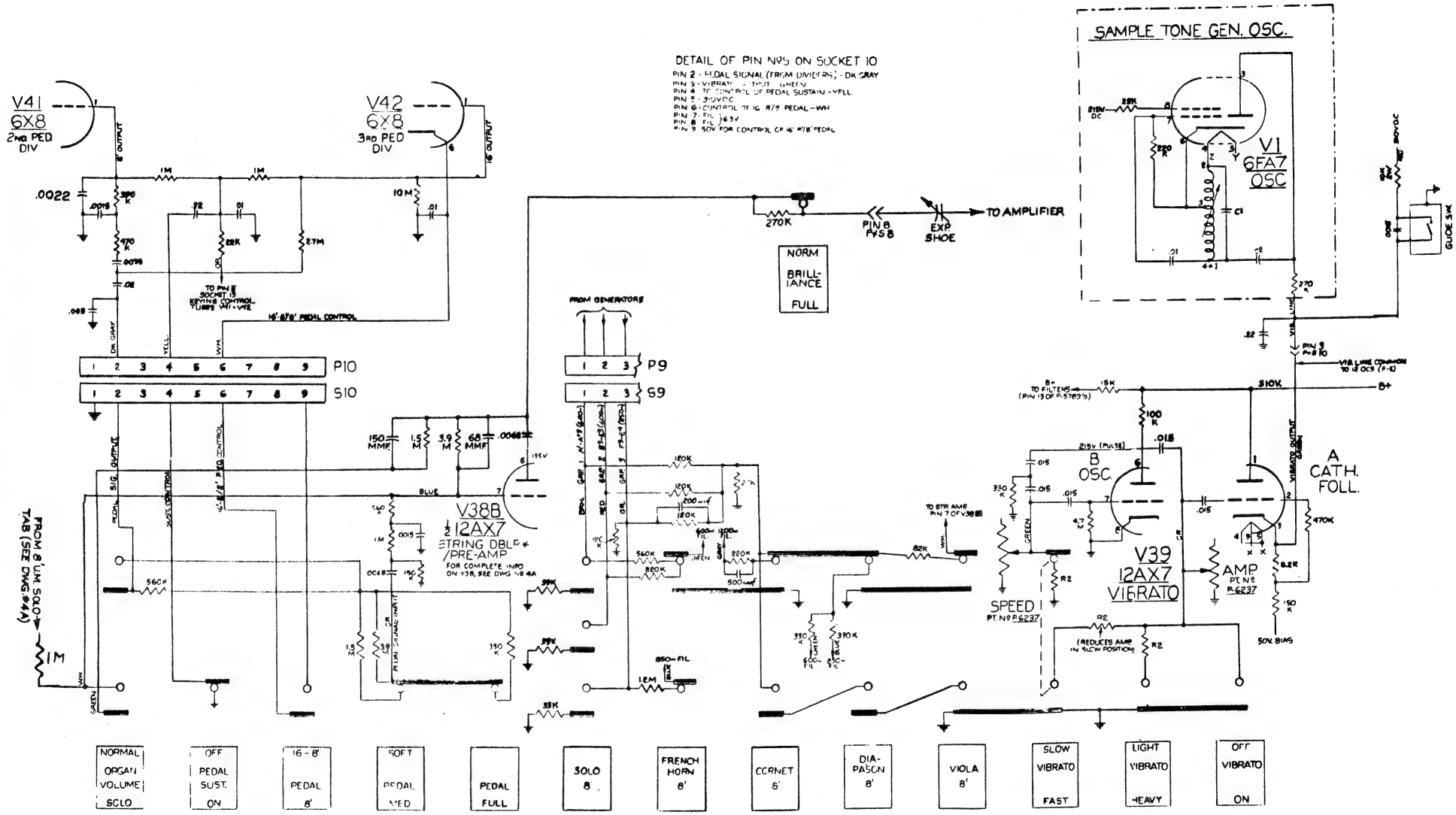

LOWREY ORGAN COMPANY
KEYSWITCH WIRING DIAGRAM
MODELS LSC-1 & LSC FROM 500,001
DRAWING NO. 3A
EXAMPLE OF GENERATOR (E)
V1 6X8 OSC
V2 6X8 1st DIV
V3 6X8 2nd DIV
P-5850-I
SOLO COLLECTOR (WHITE)
P-8684 (SOLO DIVIDER)
UPPER MANUAL
L.S.C. (FROM SER. NO. 500,001)
UPPER MANUAL KEYBOARD (FRONT VIEW)
V43 6X8 SOLO DIVIDER
P-8684
LOWER MANUAL
LOWER MANUAL KEYBOARD (FRONT VIEW)
TO QUALITY CONTROL
1ST OCT
2ND OCT
3RD OCT
4TH OCT


LOWREY ORGAN COMPANY
QUALITY CONTROL
SCHEMATIC
MODEL L. S. C. & LSC
FROM No 500,001 DWG 4
NOTES
1. ALL SWITCHES SHOWN IN ON POSITION.
2. ALL RESISTORS IN OHMS UNLESS OTHERWISE SHOWN.
3. ALL CAPACITORS IN UF UNLESS OTHERWISE SHOWN.
4. R1 IS NOT IN THE FILTER COUPLATE BUT ADDED EXTERNALLY FOR TUNING.
5. R2 SET AT FACTORY FOR CORRECT VIBRATO SPEED AND DEPTH.
6. 36-.22MFD CAPACITORS LOCATED IN THE U.M. KEYSWITCH ARE GROUNDED FOR SUSTAIN THRU MECHANICAL SWITCH ACTIVATED BY MAN. SUSTAIN TAB
CIRCUIT OF P-5789
AMPLITUDE
SPEED
V39 VIBRATO
12AX7
V38 COUPLER/STRING/PRE-AMP
6CC FILTER 12AX7
1200~ FILTER 850~
12AX7 V37
P-5789-5
P-5789-6
P-5789-7
DOUBLER COIL No. 1 1700~
DOUBLER COIL No. 2 2400~
S-10
S-9
S-8
S-7
QUINT 5⅓
SOLO 5⅓
OFF MANUAL SUST. ON
MED. MANUAL SUST. LONG
FLUTE 4'
SOLO 4'
STRING 8'
TRUMPET 8'
CLARI-NET 8'
FLUTE 8'
SOLO 8'
FLUTE 16'
TROM-BONE 16'
SOLO 16'
OFF UPPER TO LOWER 8'-4' ON
OFF VIBRATO ON
LIGHT VIBRATO HEAVY
SLOW VIBRATO FAST
VIOLA 8'
DIAPASON 8'
FRENCH HORN 8'
PEDAL MED.
16'-8' PEDAL 8'
OFF PEDAL SUST. ON
NORMAL ORGAN VOLUME SOLO



LOWREY ORGAN CO
QUALITY CONTROL SCHEMATIC
UPPER MANUAL
MODEL LSC-1
DWG. Nº 4A

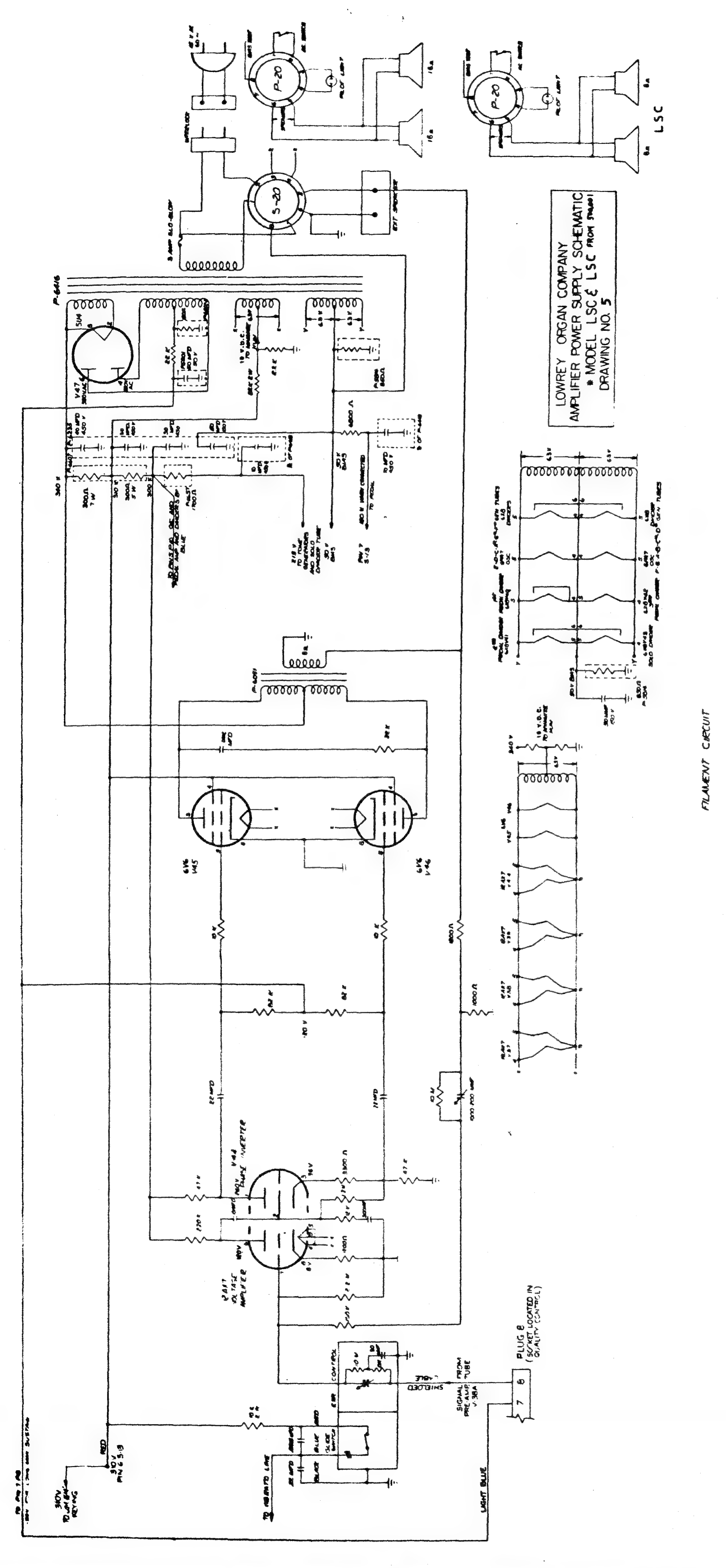
UPPER MANUAL TABSWITCH

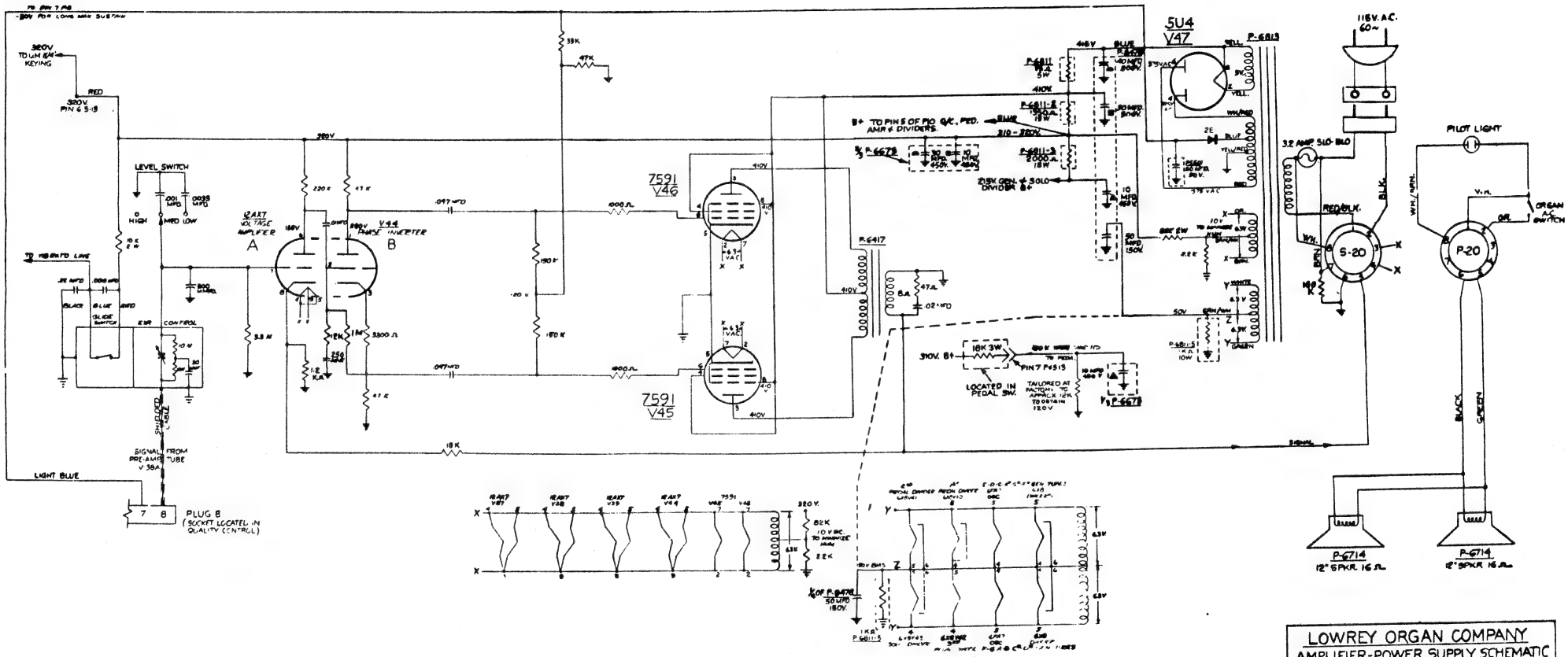


LOWREY ORGAN CO.
QUALITY CONTROL SCHEMATIC
PEDAL, L.M. VIBRATO & COUPLER CIRCUITS
MODEL LSC-1
DWG. Nº 48

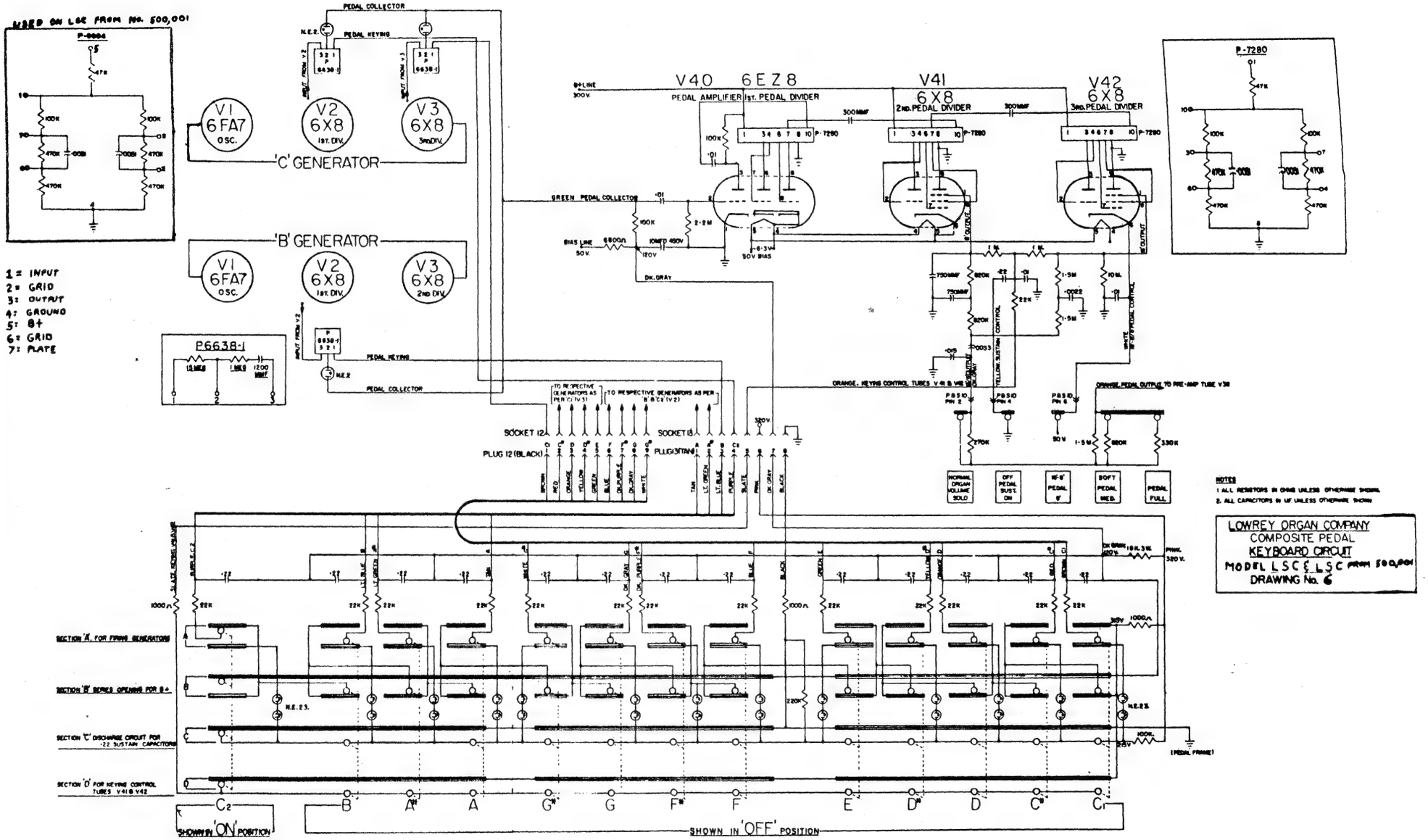
LOWER MANUAL TABSWITCH

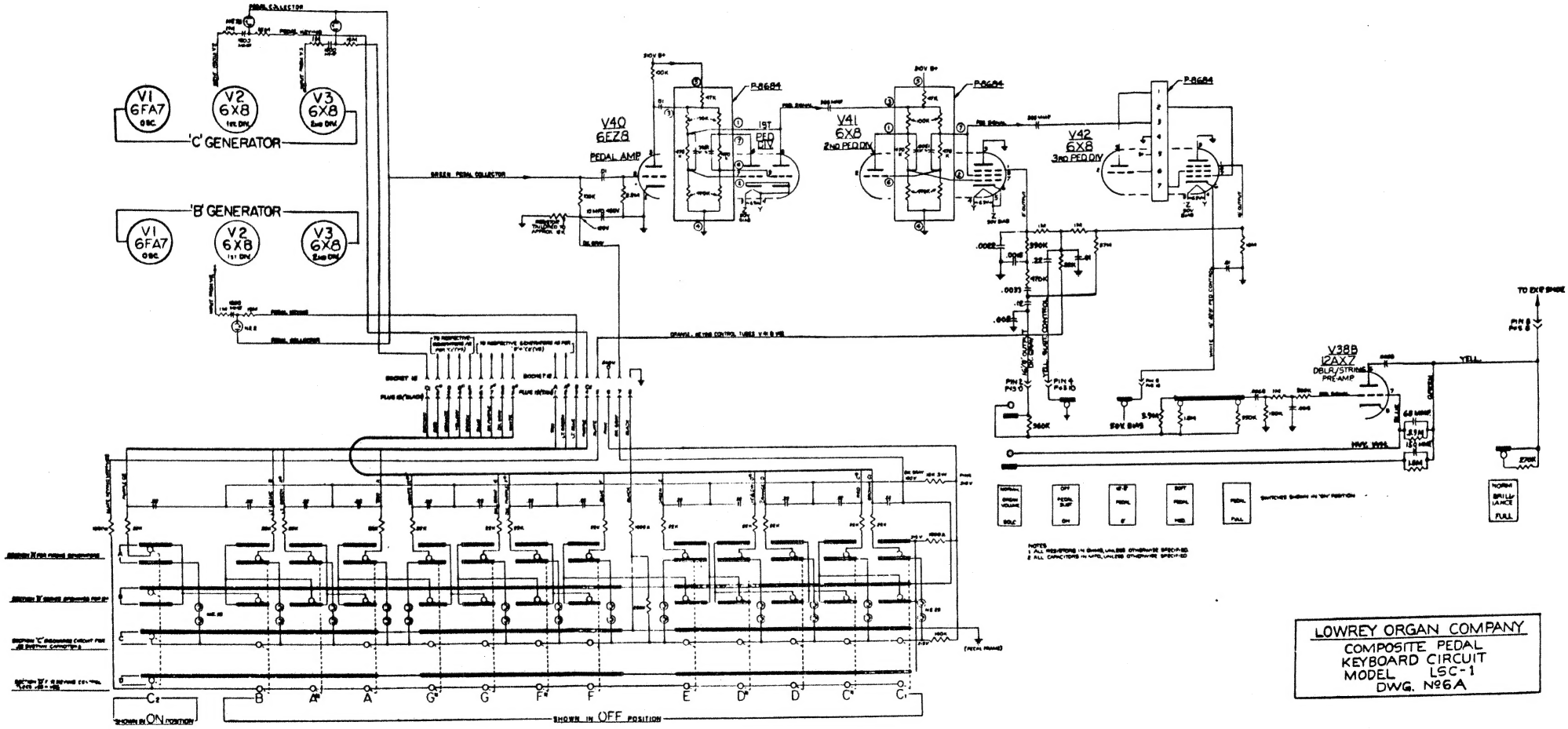
NOTES:
1. ALL SWITCHES SHOWN IN 'ON' POSITION.
2. ALL RESISTORS IN OHMS UNLESS OTHERWISE SHOWN.
3. ALL CAPACITORS IN MFD UNLESS OTHERWISE SHOWN.
4. RE SET AT FACTORY FOR CORRECT VIBRATO SPEED & DEPTH.


LOWREY ORGAN COMPANY
AMPLIFIER POWER SUPPLY SCHEMATIC
* MODEL LSC & LSC FROM
DRAWING NO. 5
LSC
FILAMENT CIRCUIT
P-20
S-20
6V6
5U4
12AT7
PLUG 8
(SOCKET LOCATED IN QUALITY CONTROL)
SIGNAL FROM PRE AMP TUBE
SHIELDED CABLE
LIGHT BLUE
RED



LOWREY ORGAN COMPANY
AMPLIFIER-POWER SUPPLY SCHEMATIC
MODEL LSC-1
DWG. NO 5A


USED ON LSC FROM No. 500,001
P-9884
V1 6FA7 OSC.
V2 6X8 1ST. DIV.
V3 6X8 3RD DIV.
'C' GENERATOR
'B' GENERATOR
V1 6FA7 OSC.
V2 6X8 1ST. DIV.
V3 6X8 2ND DIV.
1 = INPUT
2 = GRID
3 = OUTPUT
4 = GROUND
5 = B+
6 = GRID
7 = PLATE
P6638-1
PEDAL COLLECTOR
PEDAL KEYING
N.E.2.
V40 6EZ8
PEDAL AMPLIFIER 1ST. PEDAL DIVIDER
V41 6X8
2ND. PEDAL DIVIDER
V42 6X8
3RD. PEDAL DIVIDER
P-7280
B+ LINE 300V.
GREEN PEDAL COLLECTOR
BIAS LINE 50V.
50V BIAS
DK. GRAY
ORANGE. KEYING CONTROL TUBES V40 & V41
ORANGE. PEDAL OUTPUT TO PRE-AMP TUBE V38
SOCKET 12
SOCKET 13
PLUG 12 (BLACK)
PLUG 13 (TAN)
TO RESPECTIVE GENERATORS AS PER C (V3)
TO RESPECTIVE GENERATORS AS PER B (V2)
SECTION 'A' FOR FIRING GENERATORS
SECTION 'B' SHORTS OPERATING FOR B+
SECTION 'C' DISCHARGE CIRCUIT FOR .22 SUSTAIN CAPACITORS
SECTION 'D' FOR KEYING CONTROL TUBES V41 & V42
C2
B
A#
A
G#
G
F#
F
E
D#
D
C#
C1
SHOWN 'ON' POSITION
SHOWN IN 'OFF' POSITION
NORMAL ORGAN VOLUME SOLO
OFF PEDAL SUST. ON
16'8' PEDAL 8'
SOFT PEDAL MED.
PEDAL FULL
(PEDAL FRAME)
NOTES
1 ALL RESISTORS IN OHMS UNLESS OTHERWISE SHOWN.
2. ALL CAPACITORS IN UF. UNLESS OTHERWISE SHOWN
LOWREY ORGAN COMPANY
COMPOSITE PEDAL
KEYBOARD CIRCUIT
MODEL LSC & LSC FROM 500,001
DRAWING No. 6



LOWREY ORGAN COMPANY
COMPOSITE PEDAL
KEYBOARD CIRCUIT
MODEL LSC-1
DWG. №6A

The sustaining feature on the pedals requires a special circuit to prevent more than one tone at a time from entering the collector. To understand this it is necessary to consider playing any two pedals in sequence.

on depressing the first pedal, its switch spring contacts the top "on" buss bar which carries the B+ firing voltage. This fires the corresponding neon lamp and also charges the .22 mfd capacitor associated with it. As the spring continues through its "on cycle", it shorts together the B+ "on" buss bar and the "on" buss below it, activating the relay coil through a voltage divider network on the pedal switch mechanism. Upon release of the pedal, the keying voltage to the neon lamp is removed and the relay coil is no longer energized. The spring returns to its off buss bar, but the charged .22 mfd capacitor keeps the neon keyed and signal continues to the collector.

The next pedal is then depressed, repeating the firing cycle and relay activation. The off buss bar of the previously played pedal switch is connected to a contact in the bottom deck of the relay. The relay activation caused by the second pedal switch grounds this off buss bar, immediately discharging its .22 mfd capacitor. The neon lamp is no longer fired and the drive signal no longer remains on the collector.

All 13 pedal switches have an off buss, each of which is connected to a contact in the bottom deck of the relay. In addition, one contact in the relay is a ground so that the activation of the relay by any pedal switch places a ground on all of the off buss bars, insuring that any previously charged .22 mfd capacitor is immediatly discharged.

A single .22 mfd capacitor in the suppressor grid circuits of V 43 and V 44 controls pedal sustain. When charged, it continues keying voltage to these grids after release of any pedal. The pedal sustain tab switch controls this capacitor. In sustain "off" position, the switch disconnects the normally grounded side of the capacitor. Since it does not receive a charge, it cannot key V 43 and V 44 after release of a pedal. With the sustain tab "on", this switch provides the necessary ground to this capacitor so that it will take a charge and thus permit keying voltage to remain on V 43 and V 44 after release of the pedal.

Another part of the pedal circuit is the 16'-8' control tab. In the 16'-8' 8 position, the outputs of V 43 and V 44 are combined. In the 8' position, the switch removes the cathode of V 44 from the bias line and this 16' divider no longer functions, leaving only an 8' tone.

PEDAL KEYBOARD CIRCUIT - ISC

Although ISC differs from ISB in several major areas, nevertheless, the same general circuit principles are employed. It is therefore recommended that the foregoing ISB Pedal Circuit description be carefully read and understood.

ISC variations: 1. A single tube, type 6EZ8 (triple triode) is used for both amplifier and 1st divider.

2. In tone generators, a printed circuit couplet (P-6638-1) contains the keying and drive signal output components.

3. The pedal switch mechanism provides four sets of contacts for each pedal, eliminating need for the relay. A series opening keying circuit permits only one tone at a time to play, even though more than one pedal is depressed.

The schematic is drawn to correspond to the physical layout of the assembly, as viewed from the rear of the organ. For any pedal, the top switch section (A) keys the proper tone generator, to provide the drive signal. The next to the t switch section (B) is the series opening circuit that eliminates B+ to the (A) switch of any note above one being played. The on buss of the (B) switch provides a discharge path for the sustain capacitor of a higher pedal, should one lower be played at the same time.

The (C) switch section provides the normal discharge path for a sustain capacit when another pedal is played. Note the two series NE-23 neon lamps on all (A) section "off" buss bars. These return to a common point, the springs of (C) sections, which are all wired together. When any pedal is played, its .22 mfd sustain capacitor is charged and the generator neon lamp is keyed to provide a drive signal for this pedal. Upon release of the pedal, the charged capacitor keeps the neon on, to provide a sustained drive signal. The discharge path wil be through the off buss bar circuit of the (A) switch. As another pedal is keyed, its (C) spring, contacting the grounded "on" buss, discharges, through the two NE-23 neons, the sustain capacitor of the previously played pedal.

The (D) switch section of any pedal keys the signal "read out" elements (suppressor grids) of the second and third pedal divider circuits (V 41 and V 4

VIBRATO AND GLIDE CIRCUIT

The vibrato oscillator (V 40B in LSB, V 39B in LSC) provides an approximate 6 cycle pulse which produces the desired vibrato rate. The output of this oscillator is coupled to a cathode follower stage (V 41 in LSB, V 39A in LSC). The output of this cathode follower is applied to diodes (6X8 triode section is diode connected), or6FA7, which is a diode - tubes are interchangeable in V 1) of all 12 of the V 1 tubes of the tone generator chassis. A .0082 mfd capacitc is connected between the diode plate and oscillator tank circuit of each of the 12 Master oscillators. The cathode is common to both the diode and the Master oscillator, and, therefore this capacitor is effectively shunted across the tar circuit, through the tube. On positive half cycles the diode conducts and the shunted capacitor affects the frequency of the oscillator. On negative half cycles, the diode does not conduct, effectively disconnecting the capacitor. Thus, this capacitor is taken in and out of the tank circuit at the rate produced by the vibrato oscillator.

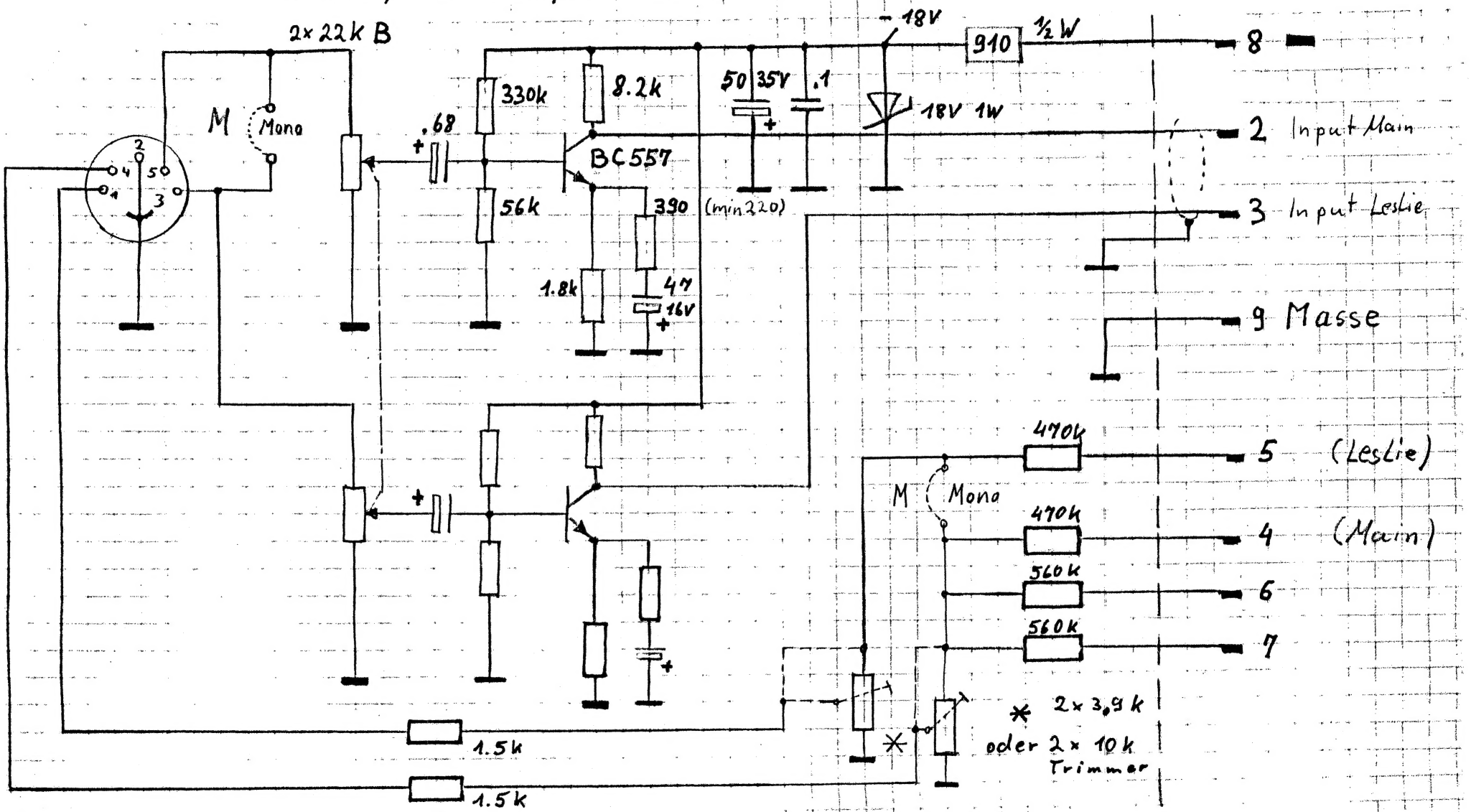
The vibrato is controlled by three tabs. With vibrato off, the "off-on" tab switch grounds out the output of the vibrato oscillator. In the "fast" positic a resistor on the tab board is added to the vibrato oscillator feed back loop, increasing the speed. In the "light" position, a resistor is added between the oscillator output and ground, decreasing the intensity. A third resistor is added to reduce intensity when in the "Slow-Heavy" vibrato position.

The vibrato oscillator speed and depth are controlled by two screwdriver slotte potentiometers. These are located on the underside of the quality control chassis. If a slight change in speed or depth is desired, first pencil mark position of slots on chassis (so that vibrato can be returned to near original speed and depth if necessary) then adjust to desired degrees.

The glide switch (controlled by the lever on the left side of the swell pedal), when activated, puts B+ into the vibrato cathode follower circuit, eliminating the vibrato pulse, and provides sufficient DC to cause the V 1 diodes to conduc more heavily. This increases the effectiveness of the .0082 mfd capacitor in each of the master oscillators, lowering the pitch.

Tonbandanschluß (Mono oder Stereo) für Lowrey-Orgeln

TG-88(-1); TG-98(-1); M-300; M-500; TGO(-1); TGS; D-300; D-500; D-550; C-300; C-500



Die Monobrücken werden bei DIN-Anschlüssen nicht benötigt.

Bei zu geringer Verstärkung können die Gegenkopplungswiderstände (390) bis auf 220 Ω erniedrigt werden.